

**CITY OF PHILADELPHIA**  
**Department of Public Health**  
**Public Health Services**  
**Air Management Services**

**Statement of Basis**

**To:** File  
**From:** Nicole Stilwell  
**Date:** January 3, 2019  
**Subject:** Kinder Morgan Point Breeze – Gasoline Throughput Increase Plan Approval

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**Description:**

Kinder Morgan Point Breeze is a gasoline loading terminal located at 6310 West Passyunk Ave, Philadelphia, PA 19153. The facility's air emissions sources include one (1) four bay motor fuels truck loading rack (LRACK), six (6) internal floating roof gasoline storage tanks (Tanks 1 through 5, and Tank 9), one (1) internal floating roof diesel fuel storage tank (Tank 8), one (1) fixed roof biodiesel storage tank (Tank 7), two (2) fixed roof gasoline additive storage tanks (Tanks 11 and 12), one (1) vapor recovery unit (VRU) primary control device (CD02) with two (2) 7,000 lb granulated activated carbon vessels with Volatile Organic Compound (VOC) Continuous Emissions Monitoring System (CEMS), one (1) vapor combustion unit (VCU) secondary control device (CD01) with a burner capacity of 40 MMBTU/hr burning natural gas/propane, and fugitive emissions from piping components. LRACK vents to either CD02 or CD01. The facility also recently permitted three (3) additional fixed roof gasoline additive storage tanks (Tanks 14 through 16) under AMS General Plan Approval Nos. IP18-000447 - 449.

**Summary:**

The facility through this plan approval is increasing the LRACK gasoline throughput to 424,400,000 gallons per rolling 12-month period. This gasoline throughput change also increases the facility-wide VOC emission limit from less than 25 tons per rolling 12-month period to 41.55 tons per rolling 12-month period. The current LRACK diesel fuel throughput will remain the same at 36,500,000 gallons per rolling 12-month period. No changes were made to the gallons per minute gasoline loading capacity for LRACK of 6,600 gallons per minute (gpm) when venting to CD-02 and 4,996 gpm when venting to CD-01. This plan approval also includes tank roof type corrections for Tanks 1 through 4 and 8 from external floating roof or breather vent to internal floating roof. The facility stated that the five tanks were permitted incorrectly by the previous owner. When Kinder Morgan acquired the property, the five tanks were already internal floating roof tanks. During the facility's last Synthetic Minor Operating Permit (SMOP) renewal, they forgot to comment on the draft or note this in the renewal application and thus this was not corrected.

Due to the gasoline throughput increase, the facility is a major source for VOCs. The facility would be a major source for Hazardous Air Pollutants (HAPs) without restrictions but is accepting an emission limit for any single HAP of less than 10 tons per rolling 12-month period and any combination of HAPs of less than 25 tons per rolling 12-month period. The facility is also required to submit a Title V/State Operating Permit application for the facility within 90 days of the issuance of this plan approval.

*Compliance Assurance Monitoring (CAM)*

Control devices CD01 and CD02 are newly applicable to the CAM requirements of 40 CFR Part 64 because the facility is now a major source of VOCs, uses a control device to comply with a facility wide annual VOC emission limit, and has a pre-control potential to emit (PTE) above 100 tpy VOC. A CAM plan for each control device (submitted by the facility) is incorporated into pages 13 through 17 of the plan approval.

### *Non-Attainment New Source Review (NNSR)*

NNSR requirements apply to an owner or operator of a facility at which a net emissions increase that is significant would occur as determined in accordance with 25 Pa Code 127.203(a). As part of the plan approval application, the facility is required to calculate whether a significant emissions increase and a significant net emissions increase will occur as a result of a physical change or a change in the method of operation. The significant emission threshold for Philadelphia County is 25 tons per year for VOC. For existing emissions units such as LRACK, an emissions increase of a regulated NNSR pollutant is the difference between the projected actual emissions and the baseline actual emissions for the facility. The VOC NNSR pollutant emissions increases for the facility is listed below in Table 1. The baseline emissions are for the period of January 2016 through December 2017. The emissions shown below in Table 1 are based on the reported VOC emissions for the entire facility in the annual emissions statements for 2016 and 2017. The NNSR pollutant emissions increases for all pollutants at the facility are listed below in Table 2.

**Table 1: VOC NNSR Analysis**

Source	2016 VOC Emissions (tpy)	2017 VOC Emissions (tpy)	Baseline Actual Emissions (tpy)	Projected Actual Emissions (tpy)	Actual Increase (tpy)
Facility	19.99	14.78	17.39	41.55	24.16

**Table 2: NNSR Analysis**

	Pollutant Increase (tons per year, TPY)								
	VOC	NO <sub>x</sub>	CO	PM	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	Lead	CO <sub>2</sub>
<i>After throughput Increase</i>	24.16	0.86	0.72	0.07	0.07	0.07	0.01	0.00	1033.20
<b>Significance Level</b>	25	25	100	25	15	10	7	0.6	75,000
<b>NNSR/PSD Triggered</b>	No	No	No	No	No	No	No	No	No

The project shows that the project emissions increase itself is not significant. Therefore, the facility must determine if there was a net significant increase over the past 10 years as per 25 Pa Code 127.303(b)(1)(ii). Kinder Morgan Point Breeze has not had a net significant increase over the past 10 years because there were no emission increases at the facility other than the increase addressed by this plan approval application over the past 10 years. Therefore, this project is not subject to the provisions of NNSR.

### **Permit Requirements:**

#### *Facility*

Kinder Morgan Point Breeze is subject to VOC emission limits for each CD-01 and CD-02 in the units of mg/L of gasoline loaded and pounds per hour as per the plan approval. The VOC emission limits for the VRU (CD-02) remain the same as the limits listed in AMS Plan Approval No. IP18-000169 dated 10/17/2018. The facility is also subject to Nitrogen Oxides (NO<sub>x</sub>) and Carbon Monoxide (CO) emission limits for the vapor combustion unit (CD-01) in units of mg/L of gasoline loaded, pounder per hour, and tons per rolling 12-month period. CD-01, the secondary control device, is also limited to 2,000 hours per rolling 12-month period of operation as per the request of the facility. Due to the operation hour limits

established in this plan approval, the emission limits for VOC, NOx, and CO for CD-01 have been changed in this plan approval and are bolded in Table 3 below.

**Table 3: Facility Wide VOC Emissions**

Pollutant	Permit Emission Limit (mg/L)	Emission Limit (lb/gal)	Loading Rate (GPM)	Loading Rate (GPH)	Emissions (lbs/hr)	Operating hours	Emission Limit (tpy)
VOC	<b>10</b>	8.4717E-05	4,996	299,760	<b>25.4</b>	2000	<b>25.4</b>
NOx	<b>4</b>	3.38868E-05	4,996	299,760	<b>10.2</b>	2000	<b>10.2</b>
CO	<b>10</b>	8.4717E-05	4,996	299,760	<b>25.4</b>	2000	<b>25.4</b>

The facility is subject to total throughput limits for LRACK for the loading of gasoline and diesel fuel per rolling 12-month period as listed above and in Condition 5 of the plan approval. The calculations to determine VOC and HAP emissions were included in the facility's plan approval application and include emissions from tanks, controlled loading operations, cleaning losses, fuel additives, and fugitives as shown below in Tables 4 and 5. The facility is required to monitor and record the total throughput for LRACK monthly and per rolling 12-month period calculated monthly. Compliance with the throughput limits for LRACK in Condition 5, the controlled loading requirements of Condition 17, and the VOC emission limits in Conditions 3(a) and 4(a) assure compliance with the facility wide HAP of Condition 2. Compliance with the throughput limits for LRACK in Condition 5, the controlled loading requirements of Condition 17, and the VOC emission limits in Conditions 3(a) and 4(a) assure compliance with the facility wide emission limit of 41.55 tons of VOC per rolling 12-month period. Compliance with the throughput limits for LRACK in Condition 5 and the emission limits in Conditions 3(a) and 4(a) assures compliance with the loading of gasoline emission limit of 37.6 tons of VOC per rolling 12-month period. Compliance with the throughput limits for LRACK in Condition 5 and the controlled loading requirements of Condition 17 assures compliance with the controlled loading of diesel emission limit of 0.1 tons of VOC per rolling 12-month period.

**Table 4: Facility Wide VOC Emissions**

	VOC Emissions (tpy)	VOC Emission Totals (tpy)
Fuel Oil Loading (Controlled)	0.04	0.07
Vertical Fixed Fuel Oil Tanks	0.03	
Gasoline Loading (Controlled)	10.69	37.64
Internal Floating Roof Gasoline Tanks	24.45	
Gasoline Cleaning Losses	2.5	

Fugitive Emissions	3.15	3.15
Fuel Additives	0.68	0.68
<b>Facility Total</b>		<b>41.54</b>

**Table 5: Facility Wide HAP Emissions**

	<b>HAP Emissions (tpy)</b>
Toluene	1.50
Xylene	0.45
Benzene	0.83
n-hexane	8.74
Ethylbenze	0.37
Cumene	0.06
Phenol	0.00
Briphenyl	0.00
Naphthalene	0.05
224 Trimethylpentane	3.05
<b>Facility Total</b>	<b>15.05</b>

The facility is also subject to the emission limit of 25 Pa Code 123.31(b), requiring the permittee not to emit malodorous air contaminants from any source in a manner that malodors are detectable outside the property boundary. The facility is subject to the work practice standards of 40 CFR 63 Subpart BBBBBB, 25 Pa Code 129.62(a), and Air Management Regulation (AMR) V Section V.D.

#### *Tanks*

The tanks at the facility are subject to the work practice standards of 40 CFR 60 Subpart Kb for internal floating rooves, 25 Pa Code 129.57, AMR XIII Section II, and AMS Plan Approval No. IP18-000169 dated 10/17/2018. The tanks are exempt from the requirements of AMR V Section V.B(1) as the facility does not load any organic material having a Reid vapor pressure of 4.0 pounds or greater from any tank truck, tank car, or trailer into any stationary storage container. For the tanks, the facility is required to keep records of the volatile organic liquid stored, period of storage, maximum true vapor pressure of the stored liquid in each tank, records required in 40 CFR 60.115b for Tanks 1-5 and 8-9, records required in 40 CFR 60.116b for all tanks, and records of each inspection required for the storage tanks.

#### *Loading Rack (LRACK)*

The LRACK throughput loading capacities established in AMS Plan Approval No. IP18-000169 dated 10/17/2018 of 6,600 gpm of petroleum products when LRACK is venting to CD-02 and 4,996 gpm of petroleum products when venting to CD-01 have not been changed. LRACK and the control devices are subject to the work practice standards of 40 CFR 60 Subpart XX, 40 CFR 63 Subpart BBBBBB, 25 Pa Code 129.62(b)-(c), AMR V Section XIII, and the implementation of a leak detection and repair (LDAR) program. For the loading rack and associated control devices, the facility is required to monitor and record, gallons per minute throughput for LRACK every minute, the monthly and quarterly leak detection and repair program, and recordkeeping required by 25 Pa Code 129.62(d).

#### *Control Devices (CD-01 and CD-02)*

The facility is to perform a stack test on the VCU secondary control device (CD-01) for VOC, NO<sub>x</sub>, and CO to demonstrate compliance with the emission limits of Conditions 4(a)-(c) no later than 9/1/2022. The last stack test on CD-01 was performed on 8/2/2016 and below in Table 6 are the test results. The average VOC Destruction Efficiency of the VCU during the test was 98.90%. The facility's VRU primary control device, CD-02 has not yet been installed at the facility but has been permitted under AMS Plan Approval No. IP18-000169 dated 10/17/18. An initial performance test to demonstrate compliance with the VOC emission limit of Condition 3(a) is to be conducted within 60 days of achieving maximum production rate but no later than 180 days after initial startup of CD-02. For the control devices, the facility is required to monitor and record, hours of operation per rolling 12-month period for CD-01 and operation of the carbon adsorption system (VRU) by installation of a CEMS.

**Table 6: 8/2/2016 CD-01 Stack Test Results**

<b>Pollutant</b>	<b>VOC (outlet)</b>	<b>NO<sub>x</sub></b>	<b>CO</b>
<b>Results</b>	7.00 mg/l (PASS)	1.32 mg/l (PASS)	0.71 mg/l (PASS)
<b>Permit Limit</b>	10.0 mg/l	4.0 mg/l	10.0 mg/l